


October 9, 1998

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air & Hazardous Waste

FROM: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste 

SUBJECT: Issuance of Revised Tier II Operating Permit (#017-00036) to
Ceda-Pine Veneer, Incorporated; Samuels, Idaho

PROJECT DESCRIPTION

Ceda-Pine Veneer, Inc., (Ceda-Pine) requests an increase of log throughput from 12.6 million board foot of log (MMBF of log) to 25 MMF of log while still keeping all other requirements the same. The original log throughput is permitted by its existing Tier II OP (#017-00036; 8/5/96), Section 2.1 of Process and Manufacturing Operations; Solid Material Transport, Handling, and Storage; Road Dust Fugitive.

DISCUSSION

On September 2, 1998, the Division of Environmental Quality (DEQ) received a letter from Ceda-Pine. The facility requests an increase of log throughput from 12.6 million board foot of log (MMF of log) to 25 MMF of log. No public comment will be provided as per IDAPA 16.01.01.404.04.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for this revised Tier II OP of \$500.

RECOMMENDATIONS

Based on the review of its existing Tier II OP, information provided by the company, and all applicable state and federal rules and regulations concerning the revision of a Tier II OP, the Bureau recommends that Ceda-Pine Veneer, Inc., be issued a revised Tier II Operating Permit. The facility has been notified in writing of the required Tier II application fee of five hundred dollars (\$500.00). The permit will be issued upon receipt of the fee.

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cc: G. Fransen, CDA Regional Office
Source File
COF

October 9, 1998

MEMORANDUM

TO: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air and Hazardous Waste

FROM: Yihong Chen, Air Quality Engineer *YC*
Air Quality Permitting Bureau
Operating Permits Section

Robert Baldwin, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section

THROUGH: Daniel Salgado, Permits Manager *DS*
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Technical Analysis for Revision of Tier II Operating Permit (#017-00036)
Ceda-Pine Veneer, Incorporated (Samuels)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 404.04 (Rules for the Control of Air Pollution in Idaho) (Rules) for revision of Tier II Operating Permits (OP).

PROJECT DESCRIPTION

Ceda-Pine Veneer, Inc., (Ceda-Pine) requests an increase of log throughput from 12.6 million board foot of log (MMBF of log) to 25 MMBF of log while still keeping all other requirements the same. The original throughput is permitted by its existing Tier II OP (#017-00036; 8/5/96), Section 2.1 of Process and Manufacturing Operations; Solid Material Transport, Handling, and Storage; Road Dust Fugitive.

SUMMARY OF EVENTS

On September 2, 1998, the Division of Environmental Quality (DEQ) received a letter from Ceda-Pine. The facility requests to increase its log throughput from 12.6 million board foot of log (MMBF of log) to 25 MMBF of log while still keeping all other requirements the same.

DISCUSSION

The new estimated potential to emit (PTE) criteria pollutants can be found in Appendix A of this memo. The PTE is below 100 ton per year (T/Yr) for each criteria air pollutant. The log throughput change will not alter the minor status of the facility. The previous permit and tech memo can be found in Appendix B of this memo.

Emission Estimates

The allowable log throughput increasing from 12.6 MMBF of log to 25 MMBF of allows increased throughput for some processes by a factor of $25 \text{ MMBF} / 12.6 \text{ MMBF} = 1.98$. These process throughputs are inherently limited by log throughput.

The new emissions are calculated as Original Throughput * Increasing Factor * Emission Factors (EFs). The updated EFs are used for the emission estimation, which are from the Technical Services Bureau's (TSB) memo "Corrections of Air Emission Factors and Speciated Data for Idaho Wood Industry", dated June 30, 1997. Changes of throughput and/or EFs cause changes of emissions.

Emissions from processes, stacks, and vents are counted towards the determination of PTE. The new PTE of PM-10, the limiting pollutant for this facility, is 75.65 T/Yr.

Permit Revision

1. Section 1, EMISSION LIMITS under Process and Manufacturing Operations; Solid Material Transport, Handling, and Storage; Road Dust Fugitive, of the Tier II OP has been revised to remove PM limits because PM is no longer used in the determination of major for purposes of the Tier I Operating Permit Program (IDAPA 16.01.01.006.23); and PM-10 is the limiting criteria air pollutant to keep facility's minor status. Also, there is no need to put limit for VOC in the permit, and it has been removed. The changes are as follows:

1. EMISSION LIMITS

PM, PM-10, and VOC emissions from the veneer production process and the solid material transport and handling operations shall not exceed any corresponding emission rate limit listed in Appendix A.

2. Section 2.1, Maximum Facility Throughput under Process and Manufacturing Operations; Solid Material Transport, Handling, and Storage; Road Dust Fugitive, of the Tier II OP has been revised as follows:

2.1 Maximum Facility Throughput

The maximum log throughput to the facility shall not exceed ~~42.6~~ 25 million board feet of log per year (MMBF of log/Yr), based on a rolling annual summation."

3. Section 1.1.2, Standby Diesel Boiler under the Tier II OP Fuel Burning Equipment - Boilers section, has been revised because PM is no longer used in the determination of major for purposes of the Tier I Operating Permit Program (IDAPA 16.01.01.006.23). The changes are as follows:

1.1.2 Standby Diesel Boiler

Particulate matter (PM) emissions from the Standby Diesel Boiler exhaust stack shall not exceed 0.05 grains per dry standard cubic foot (gr/dscf) corrected to three percent (3%) oxygen by volume (IDAPA 16.01.01.677), nor shall ~~PM and PM-10~~ emissions exceed any corresponding emission rate limit listed in Appendix A of this permit.

4. Section 3.2, Hog Fuel Boiler Performance Test required by the Tier II OP (#017-00036, 8/5/96) under the Fuel Burning Equipment - Boilers section, will carry into the revised Tier II OP if it is not fulfilled prior to issuance of the revised permit. The deadline for the test is February 5, 1999, per its existing Tier II OP. The section has been revised as follows:

3.2 Hog Fuel Boiler Performance Test

The Permittee shall conduct a performance test to measure particulate matter (PM) emissions from the hog fuel boiler exhaust stack ~~within 2.5 years of the issuance date of this Operating Permit~~ by February 5, 1999, to demonstrate compliance with Section 1.1.1 of this permit.

The emission testing method shall be in accordance with U.S. EPA Reference Method 5 or 17 (40 CFR 60, Appendix A) or a Department approved alternative. The performance test shall be conducted in accordance with General Provision I of this Operating Permit. Visible emissions shall be observed during the performance test using the methods specified in the Department's "Procedures Manual for Air Pollution Control". The operating process weight rate and steam production (i.e., pounds of steam produced per hour) shall be measured and recorded during the performance test.

5. In order to keep the minor status, all criteria air pollutants emitted from the facility need to be limited to be less than 100 T/Yr. PM-10 is the limiting pollutant for the facility. The limit set for PM-10 will inherently limit emissions of other criteria air pollutants. There is no need to put limits for these pollutants for the Standby Diesel Boiler and Processing & Material Handling. There is no change for emission limits from hogged fuel boiler, which original set by facility's PTC. Therefore, Appendix A of the permit is changed as follows:

SOURCE DESCRIPTION	PM		PM10		CO		NO _x		SO _x		VOC	
	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr	lb/hr	T/Yr
Hogged Fuel Boiler	5.40	11.20	4.90	10.20	13.70	28.50	10.80	45.36	0.50	0.95	5.80	12.10
Standby Diesel Boiler	—	—	—	0.78	—	—	—	—	—	—	—	—
Processing & Material Handling	—	—	—	64.67	—	—	—	—	—	—	—	—

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fee for the Tier II permit of five hundred dollars (\$500.00).

AIRS

The AIRS database for Ceda-Pine will be updated to include the new log throughput as a result of this permit revision.

RECOMMENDATIONS

Based on the review of its existing Tier II OP, information provided by the company, and all applicable state and federal rules and regulations concerning the revision of a Tier II OP, the Bureau recommends that Ceda-Pine Veneer, Inc., be issued a revised Tier II Operating Permit. No public comment will be provided as per IDAPA 16.01.01.404.04. The facility has been notified in writing of the required Tier II application fee of five hundred dollars (\$500.00). The permit will be issued upon receipt of the fee.

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cc: G. Fransen, Coeur D'Alene Regional Office
Source File
COF

APPENDIX A

Facility: Ceda-Pine Veneer, Inc.
 Mailing Address: P.O. BOX 536
 Post Falls, ID 83854
 Person to Contact: Patrick L. Malloy
 Phone: (208)263-7527

Tier II OP #017-00036, issued 8/5/96, revision -

PTE estimation for log throughput increase from 12.6 MMBF to 25 MMBF

Source Description	PM-10 T/Yr	CO T/Yr	NOx T/Yr	SO2 T/Yr	VOC T/Yr
Hogged Fuel Boiler	10.20	28.50	45.36	0.95	12.10
Standby Diesel Boiler	0.78	1.94	7.78	27.99	0.08
Processing and material handling	64.67	---	---	---	0.27
Total	75.65	30.44	53.14	28.94	12.45

PTE of PM-10 estimation from processing and material handling

Assumption

1. Moisture Content of log=50%

2. Moisture Content of Veneer =15%

3. Density of green lumber =45 lb/ft³ (ref. conversion factors for the pacific northwest forest industry)

Conversion Factor

1. 1 ton of log = 1 Bon Dry Ton (BDT) of log / (1- moisture content percentage of log)

2. 1 MBF of log (thousand board feet) =4.80 tons of log (Pinehurst PM10 SIP, 2/25/92, b-49)

Emission Factors:

Operating hour per year8,760 hour

New Annually log throughput =25 MMBF =120,000 Green tons of log

Increasing Factor =1.98 (25 MMBF / 12.6 MMBF)

Process	Annually Throughput			Emission Factor	Emissions	Note
	Original	New	New(green T/yr)			
Outdoor activity						
p1 Deck Saw			120,000	lb/T of log 0.2	12.00	Emissions = throughput * EF
p2 Ring Debarker			120,000	0.011	0.66	same as log tonnage
p3 Chow Saw #1			120,000	0.2	12.00	log ton
p4 Rosser Head	MBF/yr	MBF/yr				New throughput = original * increasing factor
	8,760	17,381	83,429	0.011	0.46	Green T = MBF * 4.8 (ton of log/MBF of log)
						Max @8760 = actual @4000 hr / 4000 * 8760
p5 Chop Saw			120,000	0.2	12.00	
p11 Falcon Hog #2	BDT/yr	BDT/yr		lb/T of wood		Green T = BDT / 50%
	15,440	30,634	61,268	0.2	6.13	Max @8760 = actual @4000 hr / 4000 * 8760
p7 Chipper #1 (1)	52,705	104,573	209,145	0.011	1.15	Max @8760 = actual @4000 hr / 4000 * 8760
p8 Chipper #2	1,051	2,086	4,171	0.011	0.02	Max @8760 = actual @4000 hr / 4000 * 8760
p9 Screen Out (1)	52,705	104,573	209,145	0.011	1.15	Max @8760 = actual @4000 hr / 4000 * 8760
p17 Knife Hog (Veneer)	1,012	2,007	4,014	0.2	0.40	Max @8760 = actual @8400 hr / 8400 * 8760
Indoor activity						
building control efficiency	90%					
p6 Sawmill			120,000	0.2	10.80	material balance p5 = p6
						Assume each log sawed 9 times
p14 Slicer	MSF @3/8"		5	0.2	0.00	material balance p14 = p15, p15 permitted to be 6,640 MSF @3/8"
	6,640					steaming while slicing (op#017-00036, 8/5/96)
						Assume steam control efficiency 90%
						assume each cant sliced into 50 sheets
p16 clip/grade	MSF @3/8"		3	0.2	0.00	material balance p15 (BDT) = p16 (BDT)
	6,640					P16 (Green T) = p15*(1-50%)/(1-15%)
Cyclones						
p10 Fine Blower Cyclone			4,993	0.25	0.62	Max @8760 = actual @4000 hr / 4000 * 8760
				gr/scf air		EF from TSB's memo
p18 Globe Saw Cyclone			394	0.015		1000 acfm, ambient stack temp from app. assume: acf=scf here
				lb/hr		EF (lb/hr) = 0.015(gr/scf/7000(gr/lb)*1,000 (scf/min)*60(min/hr)
				0.13	0.56	emission (T/yr) = EF(lb/hr) *8760/2000
Steam Chambers and steam dryer						
p12 + p.13 steam chamber #1 + #2	MSF @3/8"			lb/MSF @3/8"	3.35	material balance p12+p13=p15
	6,640			1.01		EF from TSB's memo for dryer. can be change when better data available
P 15 Steam Dryer	MSF @3/8"			lb/MSF @3/8"	3.35	permitted throughput
	6,640			1.01		EF from TSB's memo
Material Handling of Processes						
TR2 Chain Conveyor	BDT/yr	BDT/yr		lb/T		EFs (2)
	110	217	435	0.0000265	0.00	# of transfer 1 app. 7/17/95
TR3 2 Vib. 2 belt conveyors	15,440	30634	61,268	0.0000265	0.00	# of transfer 6 app. 7/17/95
TR4 2 chain conveyors	15,440	30634	61,268	0.0000265	0.00	# of transfer 1 app. 7/17/95
TR7 Belt Conveyors	1,699	3372	6,744	0.0001432	0.00	# of transfer 1 app. 7/17/95
Total					64.67	

Note:

(1) Data in the app. is conflict with the material balance. Any material chipped more than once? However, the change of emissions from these two units will not change the output of the permit

(2) $E = k * (0.0032) * ((U/5)^{(1.3)} * (M/2)^{(1.4)})$ (AP - 42, 1/95, 13.2.4)

Wind speed (U) = 9.00 mph (per app. 7/19/95)

Moisture content percentage (%): 50 for green wood and 15 for dried veneer, per app.

k (PM-10) = 0.35

PTE of VOC estimation from Steam Chambers and Steam Dryer

Steam Chambers and steam dryer					
p12 + p.13 steam chamber #1 + #2	MSF @3/8"			lb/MSF @3/8"	0.13 material balance p12+p13=p15
	6,640			0.04	EF from TSB's memo for dryer. can be change when better data available
P 15 Steam Dryer	MSF @3/8"			0.04	0.13 permitted throughput
	6,640				EF from TSB's memo
Total					0.27

APPENDIX B

STATE OF IDAHO
AIR POLLUTION
OPERATING PERMIT

GENERAL INFORMATION

PERMIT NUMBER

017 - 00036

AQCR

063

CLASS

A2

SIC

2436

ZONE

11

UTM COORDINATE (km)

537 5 5363 5

1. PERMITTEE

Ceda-Pine Veneer, Incorporated (Samuels)

2. PROJECT

Tier II Operating Permit

3. ADDRESS

100 Samuels Road

TELEPHONE #

(208) 263-7527

COUNTY

Bonner

4. CITY

Samuels

STATE

Idaho

ZIP CODE

83864

5. PERSON TO CONTACT

Patrick L. Malloy

TITLE

President of Operations

6. EXACT PLANT LOCATION

100 Samuels Road

7. GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS

Softwood Veneer and Green Dimensional Lumber Manufacturing

8. GENERAL CONDITIONS

This permit is issued according to the Rules for the Control of Air Pollution in Idaho, Section 16.01.01.400 and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be operated by this permit.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED WITH ITS APPLICATION CHANGES IN DESIGN OR EQUIPMENT, THAT RESULT IN ANY CHANGE IN THE NATURE OR AMOUNT OF EMISSIONS, MAY BE A MODIFICATION. MODIFICATIONS ARE SUBJECT TO DEPARTMENT REVIEW IN ACCORDANCE WITH Section 16.01.01.200 OF THE Rules for the Control of Air Pollution in Idaho.

Deville D. Green

ASSISTANT ADMINISTRATOR
DIVISION OF ENVIRONMENTAL QUALITY

ISSUED AUGUST 5, 1996

Date

EXPIRES AUGUST 5, 2001

Date

AIR POLLUTION OPERATING PERMIT

PERMIT NUMBER

PERMITTEE AND LOCATION

Ceda-Pine Veneer, Incorporated
Tier II Operating Permit
Samuels, Idaho

017 - 00036

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

General Plant Description

1. GENERAL OPERATING REQUIREMENTS

1.1 Operating Requirements

All equipment, including the control equipment, addressed in this permit shall be operated and maintained in accordance with manufacturer's recommendations and specifications.

1.2 Opacity Limit

No air pollutant shall be discharged into the atmosphere from any point of emission for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period which is greater than twenty percent (20%) opacity as determined by procedures contained in the Procedure's Manual for Air Pollution Control, Section II (Evaluation of Visible Emissions Manual) per IDAPA 16.01.01.625 (Rules for the Control of Air Pollution in Idaho).

2. GENERAL REPORTING REQUIREMENTS

2.1 Exceedence Reporting of Operational Parameters

The Permittee shall submit a written report to the Department of any exceedence of the parameters specified in Section 1 of the General Plant Description section, Sections 1 and 2 of Fuel Burning Equipment - Boilers section, and Sections 1 and 2 of Process and Manufacturing Operations, Solid Material Transport, Handling, and Storage, Fugitive Road Dust. The report must be postmarked within fifteen (15) days of the occurrence of the exceedence(s), per IDAPA 16.01.01.135.

2.2 Certification of Documents

All documents, including, but not limited to, progress reports, records, monitoring data, supporting information requests for confidential treatment, testing reports, or compliance certifications, shall contain a certification by a responsible official in accordance with IDAPA 16.01.01.123. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information provide the signature and title of the responsible official and the date of the signature.

Issued: August 5, 1996
Expires: August 5, 2001

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AIR POLLUTION OPERATING PERMIT

PERMITTEE AND LOCATION

Ceda-Pine Veneer, Incorporated
Tier II Operating Permit
Samuels, Idaho

PERMIT NUMBER

017 - 00036

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Fuel Burning Equipment - Boilers

1. EMISSION LIMITS

1.1 Particulate Matter (PM)1.1.1 Hog Fuel Boiler

Particulate matter (PM) emission from the Hog Fuel Boiler exhaust stack shall not exceed 0.08 grains per dry standard cubic foot (gr/dscf) corrected to eight percent (8%) oxygen by volume (IDAPA 16.01.01.676) (Rules for the Control of Air Pollution in Idaho), nor shall PM and PM-10 (IDAPA 16.01.01.006.71) emissions exceed any corresponding emission rate limit listed in Appendix A of this permit.

1.1.2 Standby Diesel Boiler

Particulate matter (PM) emissions from the Standby Diesel Boiler exhaust stack shall not exceed 0.05 grains per dry standard cubic foot (gr/dscf) corrected to three percent (3%) oxygen by volume (IDAPA 16.01.01.677), nor shall ~~PM~~ and PM-10 emissions exceed any corresponding emission rate limit listed in Appendix A of this permit.

1.2 CO, NO_x, SO₂, and VOC Emission Limits

CO (carbon monoxide), NO_x (nitrogen oxide), SO₂ (sulfur dioxide), and VOC (volatile organic compounds) emissions from the exhaust stacks of the Hog Fuel Boiler and Standby Diesel Boiler shall not exceed any corresponding emission rate limit listed in Appendix A of this permit.

2. OPERATING REQUIREMENTS

2.1 Fuel Specification

The sulfur fuel content shall not exceed 0.3 percent by weight for #1 fuel oil or 0.5 percent by weight for #2 fuel oil, as required by IDAPA 16.01.01.728. The boilers shall burn the fuel as specified in Sections 1.2.1 and 1.2.2 exclusively.

2.2 Fuel Consumption2.2.1 Hog Fuel Boiler

The maximum monthly fuel consumption rate shall not exceed 2,016 green tons per month (ton/month).

The maximum fuel consumption shall not exceed 19,600 green tons per year (T/yr), based on a rolling annual summation.

The average hourly steam generation shall not exceed 16,000 pound steam per hour (lb steam/hr).

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AIR POLLUTION OPERATING PERMIT

PERMITTEE AND LOCATION

Ceda-Pine Veneer, Incorporated
Tier II Operating Permit
Samuels, Idaho

PERMIT NUMBER

017 - 00036

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Fuel Burning Equipment - Boilers

2.2.2 Standby Diesel Boiler

The maximum average fuel consumption rate shall not exceed 777,504 gallons per year, based on a rolling annual summation.

2.3 Control Requirement

2.3.1 Particulate Matter (PM) emissions from the Hog Fuel Boiler are controlled by a Hurst Model HBC 600/300-MC multiclone.

3. MONITORING AND RECORDKEEPING REQUIREMENTS

3.1 Fuel Consumption

3.1.1 Hog Fuel Boiler

The Permittee shall monitor and record the estimated fuel consumption rate on both a monthly and an annual basis. These amounts shall be recorded as green tons per month (T/month) and green tons per year (T/yr) to demonstrate compliance with Section 2.2.1 of this permit. The annual amount shall be based on a rolling annual summation. The monitoring data shall be recorded in a log kept at the facility for the most recent two (2) year period and shall be made available to Department representatives upon request.

Within three (3) months from issuance of this permit, the Permittee shall install, calibrate, maintain, and operate a measuring equipment to measure the steam flow rate.

The Permittee shall monitor the steam flow rate and record the monthly average steam flow rate in pound steam per hour. The monthly average steam flow rate shall be recorded in a log kept at the facility for the most recent two (2) year period and shall be made available to Department representatives upon request.

3.1.2 Standby Diesel Boiler

The Permittee shall monitor and record the amount of fuel (#1 or #2 fuel oil) combusted to demonstrate compliance with Section 2.2.2 of this permit. The annual amount shall be based on a rolling annual summation. The monitoring data shall be recorded in a log kept at the facility for the most recent two (2) year period and shall be made available to Department representatives upon request.

Issued: August 5, 1996
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AIR POLLUTION OPERATING PERMIT

PERMIT NUMBER

PERMITTEE AND LOCATION

Ceda-Pine Veneer, Incorporated
Tier II Operating Permit
Samuels, Idaho

017 - 00036

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Fuel Burning Equipment - Boilers

3.2 Hog Fuel Boiler Performance Test

The Permittee shall conduct a performance test to measure particulate matter (PM) emissions from the hog fuel boiler exhaust stack within 2.5 years of the issuance date of this Operating Permit to demonstrate compliance with Section 1.1.1 of this permit.

The emission testing method shall be in accordance with U.S. EPA Reference Method 5 or 17 (40 CFR 60, Appendix A) or a Department approved alternative. The performance test shall be conducted in accordance with General Provision I of this Operating Permit. Visible emissions shall be observed during the performance test using the methods specified in the Department's "Procedures Manual for Air Pollution Control". The operating process weight rate and steam production (i.e., pounds of steam produced per hour) shall be measured and recorded during the performance test.

4. REPORTING REQUIREMENTS

4.1 Performance Test Protocol

The Permittee shall submit a protocol for the performance test required in Section 3.2 of this permit to the Department for approval at least thirty (30) days prior to the test date.

4.2 Performance Test Report

The Permittee shall submit a written report of the boiler performance test to the Department within forty-five (45) days after performing the test. The information required to be recorded during the performance test shall also be submitted as part of the report.

Issued: August 5, 1996

Expires: August 5, 2001

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AIR POLLUTION OPERATING PERMIT

PERMIT NUMBER

PERMITTEE AND LOCATION

Cada-Pine Veneer, Incorporated
Tier II Operating Permit
Samuels, Idaho

017 - 00036

The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Process and Manufacturing Operations; Solid Material Transport, Handling, and Storage; Road Dust Fugitive

1 EMISSION LIMITS

PM and PM-10 Emission Limits

~~PM~~ PM-10, and ~~VOC~~ emissions from the veneer production process and the solid material transport and handling operations shall not exceed any corresponding emission rate limit listed in Appendix A.

2. OPERATING REQUIREMENTS

2.1 Maximum Facility Throughput

The maximum log throughput to the facility shall not exceed 12.6 million board feet of log per year (MMBF of log/yr), based on a rolling annual summation.

2.2 Maximum Throughput to Steam Dryer

The maximum veneer dryer throughput shall not exceed 6,640 thousand square feet veneer per year at its equivalent 3/8" thickness, based on a rolling annual summation.

2.3 Control of Fugitive Emissions

Fugitive emissions generated from solid material transport, handling, and storage operations; traffic on haul roads; traffic areas; and all other sources of fugitive emissions shall be reasonably controlled in accordance with IDAPA 16.01.01.650 (Rules for the Control of Air Pollution in Idaho).

Some of the reasonable precautions may include, but are not limited to, the following:

2.3.1 Use of water or environmentally safe chemicals;

2.3.2 Application of dust suppressants;

2.3.3 Use of control equipment;

2.3.4 Covering of trucks;

2.3.5 Paving; and

2.3.6 Prompt removal of earth or other stored material from streets, where practical.

2.4 Control Requirement

2.4.1 The sawmill, veneer slicer, and veneer clipper/grading are indoor activities.

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Expires: August 5, 2001

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AIR POLLUTION OPERATING PERMIT

PERMITTEE AND LOCATION

Ceda-Pine Veneer, Incorporated
Tier II Operating Permit
Samuels, Idaho

PERMIT NUMBER

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The Permittee is hereby allowed to operate the equipment described herein subject to the emission limits and monitoring and reporting requirements specified in this permit.

SOURCE

Process and Manufacturing Operations; Solid Material Transport, Handling, and Storage; Road Dust Fugitive

3. MONITORING AND RECORDKEEPING REQUIREMENTS

The following monitoring data shall be recorded in a log kept at the facility. Records for the most recent two (2) year period shall be made available to Department representatives upon request.

3.1 Facility Log Throughput

The Permittee shall monitor and record, on a monthly and annual basis, the throughput of logs to the facility. The amounts shall be recorded as million board feet of log per year (MMBF of log/yr) to demonstrate compliance with Section 2.1 of this permit. The annual amount shall be based on a rolling annual summation.

3.2 Veneer Throughput

The Permittee shall monitor and record the monthly and annual veneer production. The amounts shall be recorded as thousand square feet per year (MSF of veneer/yr) to demonstrate compliance with Section 2.2 of this permit. The calculations used to determine the throughput shall be based on its equivalent 3/8" thickness. The annual amount shall be based on a rolling annual summation.

Issued: August 5, 1996
Expires: August 5, 2001

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APPENDIX A

Ceda-Pine Veneer, Incorporated - Samuels

Emission Limits^a - Hourly (lb/hr) and Annual^b (T/yr)

Source Description	PM		PM10		CO		NO _x		SO _x		VOC	
	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
Hogged Fuel Boiler	5.40	11.20	4.90	10.20	13.70	28.50	10.80	45.36	0.50	0.95	5.80	12.10
Standby Diesel Boiler	0.18	0.78	0.18	0.78	0.45	1.94	1.78	7.78	6.41	27.99	0.02	0.08
Process & Manufacturing Operation	51.76	71.51	31.84	50.01	---	---	---	---	---	---	14.40	60.47
Material Handling	46.20	47.76	26.84	27.51	---	---	---	---	---	---	---	---

- a As determined by a pollutant specific U.S. EPA reference method, or DEQ approved alternative, or as determined by DEQ's emission estimation methods in this permit application.
- b As determined by multiplying the allowable pound per hour emission rate by the allowable hours per year that the process(es) may operate.

Issued: August 5, 1996
Expires: August 5, 2001

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OPERATING PERMIT GENERAL PROVISIONS

- A. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The emission of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the Rules for the Control of Air Pollution in Idaho, and the Environmental Protection and Health Act, Idaho Code 39-101 et. seq.
- B. The Permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable laws for the control of air pollution.
- C. The Permittee shall allow the Director, and/or his authorized representative(s), upon the presentation of credentials:
- 1) To enter upon the Permittee's premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and
 - 2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and to require stack emission testing (i.e., performance tests) in conformance with state approved or accepted EPA procedures when deemed appropriate by the Director.
- D. Except for data determined to be confidential under Section 39-111, Idaho Code, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the appropriate regional office of the Division of Environmental Quality.
- E. Nothing in this permit is intended to relieve or exempt the Permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.
- F. In the event of any change in control or ownership of source(s) from which the authorized emissions emanate, the Permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Director.
- G. This permit shall be renewable on the expiration date, provided the Permittee submits any and all information necessary for the Director to determine the amount and type of air pollutants emitted from the equipment for which this permit is granted. Failure to submit such information within sixty (60) days after receipt of the Director's request shall cause the permit to be voided.
- H. The Director may require the Permittee to develop a list of Operation and Maintenance Procedures which must be approved by the Department. Such list of procedures shall become a part of this permit by reference, and the Permittee shall adhere to all of the operation and maintenance procedures contained therein.

Issued: August 5, 1996
Expires: August 5, 2001

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- I. Performance tests (i.e., air emission source tests) conducted pursuant to testing requirements in this permit must be conducted in accordance with the Department's Procedures Manual for Air Pollution Control. Such testing shall not be conducted on weekends or state holidays unless the Permittee obtains prior Department approval.

The Permittee shall submit a test protocol and a proposed test date for each performance test required by this permit to the Department for approval at least thirty (30) days prior to each respective test date (including each test date for periodic tests such as, for example, annual tests). The Permittee shall promptly notify the Department of any change in the proposed test date and shall provide at least five (5) working days advanced notice prior to conducting any rescheduled test, unless the Department approves a shorter notice period.

Within forty-five (45) days of the date on which a performance test required by this permit is concluded, the Permittee shall submit to the Department a performance test report for the respective test. The performance test report shall include any and all process operating data required to be recorded during the test period as well as the test results, raw test data, and associated documentation.

The maximum allowable source operating rate shall be limited to 120% of the average operating rate attained during the most recent performance test conducted pursuant to this permit which demonstrated compliance with the respective pollutant emission limit unless; (1) a more restrictive operating limit is specified elsewhere in this permit or; (2) at such an operating rate, emissions would exceed any emission limit(s) set forth in this permit.

- J. The provisions of this permit are severable; and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances; and the remainder of this permit shall not be affected thereby.

Issued: August 5, 1996
Expires: August 5, 2001

YHC:jrj.../permit/cedapine/c-pineaf.PMT

August 5, 1996

MEMORANDUM

TO: Brian R. Monson, Chief
Operating Permits Bureau
Permits and Enforcement

FROM: Yihong H. Chen, Air Quality Engineer *YC*
Operating Permits Bureau
Bill Rogers, Air Quality Engineer *BR*
Construction Permits Bureau

THROUGH: Susan J. Richards, Air Quality Permits Manager *SJR*
Operating Permits Bureau

SUBJECT: Technical Analysis for Tier II Operating Permit (#017-00036)
Ceda-Pine Veneer, Inc., Samuels, Idaho (Part I - Non-Confidential)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits.

FACILITY DESCRIPTION

Ceda-Pine Veneer, Inc., is located in Samuels, Idaho. The facility produces softwood veneer and green dimensional lumber. Logs are stored and debarked on site. The removed bark is recycled as fuel for the boiler. An assortment of saws cut the logs into cants and dimension lumber. The cants are heated in the steam chambers and further processed into veneer. The veneer is dried and stored on site. The dimensional lumber is sold as a rough green product. By-products such as wood chips and sawdust are sold as products to outside vendors. Process steam is provided by a wood waste boiler and a standby diesel boiler.

Bark is hogged and conveyed to the fuel house. The trim ends from the sawmill are chipped and transferred to the chip surge bin. Sawdust from the chipping passes through the fines blower cyclone and is transferred to a sawdust pile. Chips generated in the veneer production process are transfer to a chip bin. Veneer trash is hogged and transferred to the fuel house. Sawdust generated from the veneer process goes through a globe saw cyclone and is transferred to the fuel house. Wood chips and sawdust are sold as products to outside vendors.

Emission sources at the facility include fuel burning equipment such as boilers; process and manufacturing operations such as the sawmill, steam chambers, veneer dryer, cyclones; storage tanks; material transport, handling, and storage; and fugitive road dust.

PROJECT DESCRIPTION

This project is for an Operating Permit (OP) for the following existing point and fugitive emission sources.

Emission Units:

- (1) Hog Fuel Boiler - with a maximum rated capacity of 20,000 lb steam per hour. Hogged wood waste (bark, sawdust, and veneer trim ends and trash) generated on-site is used as fuel. The boiler furnace contains two (2) underfeed stokers. The boiler was constructed in 1988. The facility was issued Permit to Construct (PTC) #0240-0036. Because construction of this emissions unit commenced prior to June 9, 1989, the effective NSPS date, this emissions unit is not subject to federal regulation in accordance with 40 CFR 60, Subpart Dc. The emissions from the Hog Fuel boiler are controlled by a Hurst Model HBC 600/300-MC multiclone.

Equipment Specifications:

Manufacturer:	Hurst
Model:	H4-4040-300
Max. Rated Capacity:	20,000 lbs steam/hr
Fuel:	Hogged wood waste

Stack Design Specifications:

Height:	40 feet
Exit Diameter:	2.1 feet
Exit Gas Flow Rate:	15,265 acfm
Exit Temperature:	325°F

- (2) Standby Diesel Boiler - with a maximum rated capacity of 10,000 pound steam per hour. The boiler was constructed in August 1976. This emissions unit is not subject to federal regulation in accordance with 40 CFR 60, Subpart Dc because of its construction date.

Equipment Specifications:

Manufacturer:	York Shipley
Model:	300 H/P
Design Capacity:	10,000 lbs/hr
Fuel:	#1 or #2 fuel oil

Stack Design Specifications:

Height:	28 feet
Exit Diameter:	1.5 feet
Exit Gas Flow Rate:	1,500 acfm
Exit Temperature:	415°F

- (3) P1 Deck Saw
- (4) P2 Ring Debarker
- (5) P3 Chop Saw
- (6) P4 Rosser Head Debarker
- (7) P5 Chop Saw
- (8) P7 Chipper #1
- (9) P8 Chipper #2
- (10) P9 Screen Out
- (11) P10 Fines Blower Cyclone
- (12) P11 Falcon Hog
- (13) P12 & P13 Steam Chamber #1 & #2
- (14) P15 Steam Dryer
- (15) P17 Knife Hog
- (16) P18 Globe Saw Cyclone
- (17) ST1, ST7 Bins - Bins for chips.
- (18) Sawmill, Slicer, and Clip/grade.

Fugitive Sources:

- (1) Storage Piles.
- (2) Paved and Unpaved Roads.

SUMMARY OF EVENTS

On April 7, 1995, DEQ received an application for a Tier II OP. On June 9, 1995, the application was determined incomplete. On July 17, 1995, information was received addressing the incompleteness determination. The application was determined administratively complete on August 18, 1995. On August 21, 1995, the revised Section 1 of the General Information portion of the Tier II Application was received.

On October 11, 1995, DEQ Air Quality Engineers, Bill Rogers and Yihong Chen met with the facility's Consultant, Gretchen Hoy, to discuss some problems associated with emission calculations, and the material balance for the process. The issues raised in the meeting were significant in regard to the issuance of a Tier II OP. The letter requested that the facility voluntarily grant DEQ a sixty (60) day extension to the mandated timeline. On October 26, 1995, DEQ received the sixty (60) day extension from

the facility. However, all of the requested information was not received by DEQ within the sixty (60) day timeline. On December 15, 1995, the facility granted DEQ another forty-five (45) day extension to provide the requested information to DEQ. DEQ accepted the new extension and requested that the information be submitted by January 3, 1996. On January 8, 1996, DEQ received the requested information. On January 25, 1996, the facility granted DEQ an additional fifteen (15) day extension to resolve the confidentiality issue. On January 26, 1996, DEQ accepted the extension and stated that if the confidentiality issue is resolved within the time frame, the proposed Tier II permit will be issued on February 14, 1996. On January 26, 1996, DEQ sent a letter explaining Idaho code and Rules regarding confidentiality and requested the facility's response by February 5, 1996.

On March 25, 1996, a proposed Tier II OP was issued for public comment. A public comment period was then held from April 10, 1996, to May 10, 1996. On May 13, 1996, DEQ received comments about the content of the proposed OP. These comments were addressed by DEQ in the response package.

DISCUSSION

1. Emission Estimates

Emission estimates were provided by the facility and can be seen in the April 7, 1995, application and in the July 17, 1995, amended application submittal. DEQ has estimated the PM, PM-10, SO₂, NO_x, CO, and the VOC (Volatile Organic Compound) emissions based on facility's submittal except for fugitive road dust emissions and storage tanks emissions.

The emissions from Standby Diesel Boiler were calculated based on facility's submittal and AP-42 Section 1.3 (Fuel Oil Combustion, 1/95). The emission factors (EFs) used to estimate the emissions from manufacturing operations, and material handling were taken from AP-42 Section 10.3 (Plywood Veneer and layout Operations, 2/80), Section 10.4 (Woodworking Waste Collection Operations, 2/80). For the steam chamber, EFs were taken from application reference 17. For storage piles, EFs were taken from EPA AIRS(3/90) SCC 3-07-008-03. For screening and material transfer, due to lack of data, AP-42 Section 11.19.2 (Crushed Stone Processing, 1/95) and Section 13.2.4 (Aggregate Handling and Storage Piles, 1/95) were used.

The facility has an existing Permit to Construction (#0240-0036) for its Hog Fuel Boiler. The emission limits for TSP, PM-10, CO, NO_x, SO₂, and VOC are 5.4 lb/hr and 11.2 ton/yr, 4.9 lb/hr and 10.2 tons/hr, 13.7 lb/hr and 28.5 tons/hr, 2.3 lb/hr and 4.9 tons/yr, 0.5 lb/hr and 1.1 tons/yr, and 5.8 lb/hr and 12.1 tons/hr, respectively. In order to ensure the emissions of hog fuel boiler within the limits, the practical enforceable limits are given in the OP permit as follows: the average monthly fuel consumption shall not exceed 2.8 tons/hr x 24 hr/day x 30 day/month = 2,016 ton/month; and annually fuel consumption rate shall not exceed 2.8 tons/hr x 24 hr/day x 7 days/wk x 50 wk/yr/1.2 = 19,600 tons/yr.

The facility source tested the Hog Fuel Boiler in July 1990 at its design steam rate of 20,000 lb steam/hr. The grain loading was 0.07 gr/dscf. The heating value and moisture content of hog fuel used for the boiler were 3,857 Btu/lb and 56.2%, respectively based on recent fuel analysis (February 1995). Comparing with the heating value of Bark (4,500 Btu/lb) and wood (5,200 Btu/lb), the fuel used for the Hog Fuel Boiler is relatively low. In order to ensure the grain loading of the boiler within the standard, the enforceable steam flow rate is established in the OP permit, which is 20,000 lb steam/hr x (3,857 Btu/lb / (5,200 Btu/lb + 4,500 Btu/lb)/2 = 16,000 lb steam/hr. 5,200 Btu/lb and 4,500 Btu/lb are the heating values of wood and bark taken from AP-42 Appendix A-5, 1/95.

The NO_x emission rate is higher than its permit limit based on its fuel analysis and updated AP-42 Section 1.6 (Wood Waste Combustion In Boilers, 1/95), even though the boiler has not been changed. SCREEN modeling has been run and the adjusted NO_x permit limit has been given.

Within the life time of the OP permit, one source test is required for the following reasons: 1) the facility failed its first start-up source test; 2) barely passed the second source test by adding a fly ash separator screen; 3) it has been six years since the last test, the emissions may change due to wear and tear of equipment; 4) the heating value of the fuel used in boiler was relatively low based on recent fuel analysis (February 1995). If the facility fails the test a follow-up source test(s) shall be performed to demonstrate compliance.

PM-10 is the pollutant that triggers major source status for the facility according to DEQ's policy (April 4, 1996). No design capacities of wood process units were submitted. The proposed maximum process rates were used to estimate the PTE, which is above 100 tons per year (T/yr). The PTE of PM-10 is the sum of PM-10 from all the emission sources except storage piles and roads. The analysis can be found in Appendix A.

The applicant chose to net out of Tier I permitting by limiting the potential to emit of PM-10 to less than 100 T/yr. Besides hog fuel boiler mentioned above, the applicant accepted enforceable limits as follows: 1) Standby Diesel Boiler: #1 or #2 fuel oil usage shall not exceed 777,504 gallons per year, based on a rolling annual summation; 2) The maximum log processed shall not exceed 12.6 million board feet of log per year, based on a rolling year summation; 3) the maximum amount of veneer dried shall not exceed 6,640 thousand square feet per rolling year (at its equivalent 3/8" thickness); 4) the sawmill, veneer slicing, and clip/grading shall be operated in the building. The analysis of permit allowed throughput and limits can be found in Appendix B.

2. Modeling

The EPA approved SCREEN2 model was run in 1989 when PTC #0240-0036 for the Hog Fuel Boiler was issued. The EPA approved SCREEN3 model has been run only for NO_x this time due to the change of permit limits. The following modeling methodology was used to predict the impact the boiler may have on the ambient air.

The NO_x emission rate from the boiler stack was input into the SCREEN3 dispersion model as grams per second (g/s). Building downwash of the boiler building, sawmill building, veneer building, and steam chamber building were considered. The annual background concentration of NO_x is 40 ug/m³ in Bonner County. The model output gave the maximum hourly NO_x concentration. It was converted to an annual concentration by multiplying a conversion factor of 0.08. The modeling results predicted that by changing the permit limit to 45.36 T/yr will not violate the NAAQS, which is 100 ug/m³, annual average. The modeling input and results are shown in Appendix C.

3. Area Classification

Ceda-Pine Veneer, Inc., is located in Samuels, Bonner County, Idaho, as shown in Figure 1. This area is located in AQCR 63. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants (i.e., PM, PM-10, CO, NO_x, and SO₂).

4. Facility Classification

The facility is not a designated facility as defined in IDAPA 16.01.01.006.25. The facility is classified as an A2 source because potential emissions are greater than 100 T/yr but actual emissions are less than 100 T/yr.

5. Regulatory Review

This operating permit is subject to the following permitting requirements:

a.	<u>IDAPA 16.01.01.401</u>	Tier II Operating Permit;
b.	<u>IDAPA 16.01.01.403</u>	Permit Requirements for Tier II Sources;
c.	<u>IDAPA 16.01.01.404.01(c)</u>	Opportunity for Public Comment;
d.	<u>IDAPA 16.01.01.404.04</u>	Authority to Revise Operating Permits;
e.	<u>IDAPA 16.01.01.406</u>	Obligation to Comply;
f.	<u>IDAPA 16.01.01.470</u>	Permit Application Fees for Tier II Permits;
g.	<u>IDAPA 16.01.01.625</u>	Visible Emission Limitation;
h.	<u>IDAPA 16.01.01.650</u>	General Rules for the Control of Fugitive Dust;
i.	<u>IDAPA 16.01.01.675</u>	Fuel Burning Equipment -- Particulate Matter;
j.	<u>IDAPA 16.01.01.728</u>	Distillate Fuel Oil; and
h.	40 CFR 60 Subpart Dc	Standard of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for Tier II permits of five hundred dollars (\$500.00). IDAPA 16.01.01.470 became effective on March 7, 1995.

Ceda Pine - TECH MEMO
August 5, 1996
Page 5

AIRS

AIRS data entry sheet can be found in Appendix D.

RECOMMENDATIONS

Based on the review of the Operating Permit application and on all applicable state and federal rules and regulations concerning the permitting of air pollution sources, the Bureau staff recommends that Ceda-Pine Veneer, Inc., in Samuels be issued a Tier II Operating Permit for the sources that exist at the facility. Staff also recommends that the facility be notified of the Tier II permit fee requirement in writing. This fee will be applicable upon issuance of the permit.

BRM/SJR/VC:jrj...\permit\cedapine\c-pinef.TAM

cc: G. Burr, NIRO
Source File
COF

APPENDIX A

Table A-1

Date: 21-May-96

da Pine Potential to Emit (pseudo-PTE) emissions summary
Based on its given maximum rate rather than design capacity(NA)

Source	PM		PM-10	
	lb/hr	ton/yr	lb/hr	ton/yr
Hogged fuel boiler	5.4	11.2	4.9	10.2
Standby diesel boi	0.18	0.78	0.18	0.78
Process and manu	99.19	341.73	62.32	219.98
Material handling	46.20	202.34	44.67	195.66
Storage tank	---	---	---	---
total	150.96	556.05	112.07	426.62

Table A-2

Date: 21-May-96

Engineer: Yihong

Ceap Pine Veneer, Inc.

Hogged Fuel Boiler and Standby Diesel Boiler Technical Analysis

Estimation of maximum allowable hourly and annually fuel combustion rate

File name: 10BOLPTE.wk1

Boiler conversion factors (AP-42, 1/95, A-29)

1 lb steam/hr = 1.7E+03 BTU/hr

Remark

1.4 - 1.7E+03 but/hr is needed to generate 1 lb steam/hr.

Using 1.7E+03 Btu/hr is conservative

Note: boiler efficiency has been considered here already

1. HOGGED FUEL BOILER

1.1 Fuel data (Per application, tested 2/95, received 4/7/95)

Heating value(as received) 3,857 btu/lb

Moisture content 56.19 %

Nitrogen content 0.1 %

1.2 Boiler design capacity

20,000 lb steam/hr= 34 MM BTU/hr

 $(1.7E+03 \text{ BUT/hr}) / (1 \text{ lb steam/hr}) * (20,000 \text{ lb steam/hr}) / 1e+06 = 34 \text{ MM BTU/hr}$

1.3 Permitted limits (# 0240-0036)

	lb/hr	tons/yr
PM	5.4	11.2
PM-10	4.9	10.2
CO	13.7	28.5
NOx	2.3	4.9
SO2	0.5	1.1
VOC	5.8	12.1

1.4 Emission factors (EFs) with multicone controlled

Fuel data (AP-42, 1/95, A-5)

Heating value = 5,200 Btu/lb

Moisture content 50 %

PM:

Emission rate(PM,avg)= 3.9 lb/hr

Emission Factor(PM,EF)= 1.19 lb/ton fuel used

CO:

Emission rate(CO,avg)= 5.3 lb/hr

Emission Factor(CO,EF)= 1.62 lb/ton fuel used

NOx(EF)= 3.6 lb/ton fuel used

SO2(EF)= 0.075 lb/ton fuel used

VOC(EF)= 0.22 lb/ton fuel used

per applicaiton (4/7/95) and test report in source file, tested 7/90

No lbs/hr fuel input data were recored even though it is the requirement of permit #0240-0036 sec. 3.1. Therefore, the average fuel data from AP-42 are used to estimate EFs.

source test data

EF, PM=3.9(lb/hr)/34(mmbut/hr)*4,500(btu/lb)*2000(lb/ton)/1E+6(btu/mmbru)

source test data

EF, PM=5.3(lb/hr)/34(mmbut/hr)*4,500(btu/lb)*2000(lb/ton)/1E+6(btu/mmbru)

AP-42, 1/95 T1.6-2 & foot note "c"

AP-42, 1/95 T1.6-2

1.5 Combustion rate (ton/hr)

Max. hourly = 3 ton/hr

Max. annually = 26208 ton/yr

Nor. annually = 21840 ton/yr

Per application combustion rate, received 4/7/95 and source test

per application, 7day*24hr*52wk

Nor = Max./1.2

Max. hourly = 3.27 ton/hr

Max. annually = 27461.54 ton/yr

Nor. annually = 22884.62 ton/yr

per assumed fuel data and source test

 $t/h = 20,000(\text{lb steam/hr}) * (1.7e+3(\text{btu/lb steam}) / 4,500(\text{btu/lb}) / 2000(\text{lb/ton})$

Nor = Max./1.2

Table A-2

continue

1.6 Emissions

	lb/hr	t/y,max.	t/y,nor.
PM	3.58	15.63	13.03
PM-10	3.58	15.63	13.03
CO	4.86	21.24	17.70
NO _x	10.80	47.17	39.31
SO ₂	0.23	0.98	0.82
VOC	0.66	2.88	2.40

Per application

$$\text{emission (lb/hr)} = \text{EF(lb/ton fuel)} * (\text{ton fuel/hr})$$

$$\text{emission (t/y)} = \text{EF(lb/ton fuel)} * (\text{ton fuel/yr}) / 2000(\text{lb/ton})$$

$$\text{Nor} = \text{Max.} / 1.2$$

	lb/hr	t/y,max.	t/y,nor.
PM	3.90	16.38	13.65
PM-10	3.90	16.38	13.65
CO	5.30	22.26	18.55
NO _x	11.77	49.43	41.19
SO ₂	0.25	1.03	0.86
VOC	0.72	3.02	2.52

per assumption

$$\text{emission (lb/hr)} = \text{EF(lb/ton fuel)} * (\text{ton fuel/hr})$$

$$\text{emission (t/y)} = \text{EF(lb/ton fuel)} * (\text{ton fuel/yr}) / 2000(\text{lb/ton})$$

$$\text{Nor} = \text{Max.} / 1.2$$

2. STANDBY DIESEL BOILER

2.1 Fuel data

Heating value =	140,000	btu/gal
Sulfur content =	0.5	%

AP-42, 1/95, A-5

IDAPA 16.01.01.728

2.2 Boiler design capacity

10,000 lb steam/hr =	17	MM BTU/hr
----------------------	----	-----------

$$(1.7\text{E}+03 \text{ BUT/hr}) / (1 \text{ lb steam/hr}) * (10,000 \text{ lb steam/hr}) / 1\text{e}+06 = 17 \text{ MM BTU/hr}$$

2.3 Emission factors (EFs)

(lb/10³gal)

PM	2
PM10	2
CO	5
NO _x	20
SO ₂	72
VOC	0.2

AP-42, 1/95, T1.3-2

*2.4 Combustion rate

*Max. hourly =	89	gal/hr
Max. annually =	777504	gal/yr
*Nor. annually =	647920	ton/yr

Per application combustion rate, received 4/7/95

$$\text{Max. gal/yr} = \text{Max. } 89 (\text{gal/hr}) * 7\text{day} * 24\text{hr} * 52 \text{ weeks}$$

$$\text{Nor} = \text{Max.} / 1.2$$

2.5 Emissions

	lb/hr	t/y,max.	t/y,nor.
PM	0.18	0.78	0.65
PM-10	0.18	0.78	0.65
CO	0.45	1.94	1.62
NO _x	1.78	7.78	6.48
SO ₂	6.41	27.99	23.33
VOC	0.02	0.08	0.06

$$\text{emission (lb/hr)} = \text{EF(lb/1e+3 gal)} * (\text{gal/hr}) / 1000(\text{gal/1e+3 gal})$$

$$\text{emission (t/y)} = \text{EF(lb/1E+3)} * (\text{gal/yr}) / 2000(\text{lb/ton}) / 1000 (\text{gal/1e+3 gal})$$

$$\text{Nor} = \text{Max.} / 1.2$$

Table A-3

Date: 21-May-96

Ceda Pine Veneer, Inc.

ESTIMATING POTENTIAL TO EMIT (PTE, PM-10) FROM PROCESS AND MANUFACTURING OPERATIONS

Note: Unless specified, all data taken from application submittal.

1. ASSUMPTIONS:

Moisture content of log: 50% (per app.)
 Moisture content of veneer: 15% (assumption)
 Max. = 1.2" Nor. (per app.)

2. CONVERSION FACTORS:

1 ton of log = 1 Bone Dry Ton (BDT) of log (1-moisture content percentage of log)
 1 MBF (thousand board feet) = 4.5 tons of log (Pinhurst PM10 SIP, 2/5/92, B-45)

3. PM EMISSIONS (E):

3.1 OUTDOOR ACTIVITIES

Process	Hourly Production Max. Rate	unit	Operating hour	Production ton/hr	Rate Max. annually ton/yr	Emission Factors	unit	Emissions hourly lb/hr	Annually ton/yr	Remark
P1 Deck saw	15.75	MBF	1752	75.60	132451	0.2	lb/ton	15.12	13.25	(MBF/hr) = 12.6 (MMBF of log/yr)/800 (hr/yr) * 1000 operating hour = 300 hr/4000 hr * 8760 hr app. 7/19/95 and 1/8/96. EPA 450/4-90-003, p143 (MBF/hr) = (MMBF/yr)/operating hour (OP HR) (hr/yr) E(T/yr) = E(lb/hr) * OP HR (hr/yr)/2000 (lb/T)
p2 Ring debarker	3.15	MBF	8760	15.12	132451	0.011	lb/ton	0.17	0.73	(MBF/hr) = 12.6 (MMBF of log/yr)/4000 (hr/yr) * 1000
p3 Chop saw #1	3.15	MBF	8760	15.12	132451	0.2	lb/ton	3.02	13.25	same as p1&p2 Deck saw
p4 Rosser head debarker	1.20	MBF	8760	5.76	50458	0.011	lb/ton	0.06	0.28	max. rate app. 7/19/95. AP-42, T10.3-1(2/80)
p5 Chop saw #2	7.05	BDT	8760	14.11	123600	0.2	lb/ton	2.82	12.36	max. rate app. 7/19/95. AP-42, T10.3-1(2/80)
p7 Chipper #1	7.22	BDT*	8760	14.44	126481	0.1	lb/ton	1.44	6.32	app. 7/19/95. AP-42, T10.3-1(2/80) EFs for sawing with 50% off used here. Because Chipper is kind of partial closure
p6 Chipper #2	0.14	BDT	8760	0.29	2523	0.1	lb/ton	0.03	0.13	same as Chipper #1
p9 Screen out	7.22	BDT*	8760	14.44	126481	0.071	lb/ton	1.03	4.49	app. 7/19/95. AP-42, T11.19.2-2(1/95)
p11 Falcon hog	2.12	BDT	8760	4.23	37055	0.1	lb/ton	0.42	1.65	same as Chipper #1
p17 Knife hog (Veneer)	0.14	BDT	8760	0.18	1428	0.1	lb/ton	0.02	0.07	same as Chipper #1
SUM								24.13	52.72	

3.2 INDOOR ACTIVITIES

Assume indoor control efficiency =

0%

Process	Hourly Production Max. Rate	unit	Operating hour	Production ton/hr	Rate Max. annually ton/yr	Emission Factors	unit	Emissions hourly lb/hr	Annually ton/yr	Remark
P6 Sawmill	7.05	BDT	8760	14.11	123600	0.2	lb/ton	25.40	111.24	app. AP-42, T10.3-1(2/80) material balance: rate p5=p6 Assume: wood was as 9 times log E(lb/hr) = EF (lb/T) * T of log processed/ hr * (1-control efficiency) * cut times Steam was used during slicing and it is an indoor activity. Therefore, the emission from it is negligible
p14 Slicer								negligible		
p16 oilp/grade			8760	2.60	22810	0.2	lb/ton	0.52	2.28	material balance: p15(BDT)=p16(BDT) P16=P15*(1-50%)/(1-15%)
SUM								25.92	113.52	

3.3 CYCLONES

ACFM: actually cubic feet per minute.

Process	Hourly Production Max. Rate	unit	Operating hour	Stack exit Gas flow acfm	Stack exit temp.	Emission Factors	unit	Emissions hourly lb/hr	Annually ton/yr	Remark
p10 Fine Blower Cyclone	1.2	BDT	8760	2300	ambient	0.03	gr/scf	0.59	2.59	app. 4/7/95, 7/19/95. AP-42, T10.4.1(2/80) assume acf=scf E(lb/hr) = 0.03(gr/scf)/7000(gr/lb) * _(scf/min) * 60 (min/hr)
P18 Glowbe saw cyclone	NA	BDT	8760	1000	ambient	0.03	gr/scf	0.26	1.13	app. 4/7/95, 7/19/95. AP-42, T10.4.1(2/80)
SUM								0.85	3.72	

Table A-3

continue

3.4 STEAM CHAMBERS AND THE STEAM DRYER

Conversion factors

1 MBF, thousand board feet = 1.75 tons of rough green lumber (Pinehurst PM10 SIP, 2/5/92, B-45)
 1 MBF, thousand board feet = 8/3 MSF, thousand 3/8" square feet

Process	Hourly Production Max. Rate	unit	Operating hour hr	Production Rate hourly ton/hr	Rate Max. annually ton/yr	Emission Factors	unit	Emissions hourly lb/hr	Annually ton/yr	
P12 Steam chamber #1	1.26	MBF	8760	2.21	19389	1.59	lb/MBF	2.01	8.81	app. 4/7/95, rel. 17 $E(\text{lb/hr}) = (\text{MBF/hr}) * EF(\text{lb/MBF})$
P13 Steam chamber #2	1.26	MBF	8760	2.21	19389	1.59	lb/MBF	2.01	8.81	same as steam chamber #1
p15 Steam dryer	0.95	MSF	8760			7.8	lb/MSF	7.40	32.41	app. 7/19/95, AP-42, T10.3-2(2/80) 0.8 lb/MSF is used here.
	2.53	MBF	8760	4.43	38775					
SUM								11.42	50.02	It is the most conservative data

PM emissions from process and manufacturing operation are:

Total(PM-10) = lb/hr Ton/yr
 62.32 219.98

4. VOC EMISSIONS

4.1 STEAM CHAMBERS AND THE STEAM DRYER

Conversion factors

1 MBF, thousand board feet = 1.75 tons of rough green lumber (Pinehurst PM10 SIP, 2/5/92, B-45)
 1 MBF, thousand board feet = 8/3 MSF, thousand 3/8" square feet

Process	Hourly Production Max. Rate	unit	Operating hour hr	Production Rate hourly ton/hr	Rate Max. annually ton/yr	Emission Factors	unit	Emissions hourly lb/hr	Annually ton/yr	
P12 Steam chamber #1	1.26	MBF	8760	2.21	19389	1.67	lb/MBF	2.11	9.25	app. 4/7/95, rel. 17 $E(\text{lb/hr}) = (\text{MBF/hr}) * EF(\text{lb/MBF})$
P13 Steam chamber #2	1.26	MBF	8760	2.21	19389	1.67	lb/MBF	2.11	9.25	same as steam chamber #1
p15 Steam dryer	0.95	MSF	8760			0.8	lb/MSF	0.76	3.32	app. 7/19/95, AP-42, T10.3-2(2/80) 0.8 lb/MSF is used here.
	2.53	MBF	8760	4.43	38775					
SUM								4.98	21.83	It is the most conservative data

VOC emissions from process and manufacturing operation are:

Total(VOC) = lb/hr Ton/yr
 4.98 21.83

POTENTIAL TO EMIT ESTIMATION FOR SOLID MATERIAL TRANSPORT, HANDLING, AND STORAGE
ASSUMPTION

Moisture content of green wood =

50%

Moisture content of dry wood =

15%

PM EMISSIONS

1. STORAGE PILES

Process	Hourly production Max. Rate unit	Operating hour hr	Production Rate hourly ton/hr	Production Rate annually ton/yr	EFs PM-10 unit	Emissions PM-10 hourly lb/hr	Emissions annually ton/yr	Remark
								app. 4/7/95, 7/19/95, AP-42, T8.19.1-1(9/91) EPA AIR(3/90) p.143 3-07-008-03 $E(\text{lb/hr}) = E(\text{T/yr}) * 2000(\text{lb/T}) / \text{op hr}(\text{hr/yr})$ assume: EF(hog fuel) 80% EF of sawdust
*ST2 Sawdust pile	1.09 BDT	8760	2.18	19097	0.36 lb/ton	0.78	3.44	sawdust
*ST3 Fuel house(hog fuel)	2.56 BDT	8760	5.12	44851	0.288 lb/ton	0.74	3.23	Half inclosed, assume cntl e 50%
*ST4 Storage pile(hog fuel)	7.5 BDT	8760	15.00	131400	0.288 lb/ton	4.32	18.92	
*ST5 Bin bunker no bark (dry hog fuel+sawdust)	0.29 BDT	8760	0.34	2989	0.288 lb/ton	0.10	0.43	
*ST6 Ash bunker	0.29 BDT	8760	0.29	2540	0.288 lb/ton	0.08	0.37	
* inconsistency of two app. (7/17/95 & 4/7/95)								
SUM						6.02	26.38	

2. BINS

Process	Hourly Production Max. Rate unit	Operating hour hr	Production Rate hourly ton/hr	Production Rate annually ton/yr	EFs unit	Emissions (PM10) hourly lb/hr	Emissions (PM10) annually ton/yr	Remark
								app. 4/7/95, 7/19/95, AP-42, T10.4-3(7/79)
ST1 Chip surge bin	7.22 BDT	8760	14.44	126491	1 lb/ton	14.44	63.25	bin vent, material balance p7=st1 EF(PM) is used as EF(PM-10).
					2 lb/ton	28.88	126.49	bin loadout
ST7 Chip bin	0.15 BDT	8760	0.18	1546	1 lb/ton	0.18	0.77	bin vent
					2 lb/ton	0.35	1.55	bin loadout
SUM						43.85	192.06	

3. TRANSFER/CONVEYOR

Wind speed = 9 mph (per application 7/19/95)
 Moisture content = 50% (per application 7/19/95)
 $k(\text{PM}) = 1$ (AP-42, 1/95, 13.2.4)
 $K (<30 \text{ um}) = 0.74$ (AP-42, 1/95, 13.2.4)
 $K (<10 \text{ um}) = 0.35$ (AP-42, 1/95, 13.2.4)
 Production throughput = 12.6 MMBF of log/yr

Process	Hourly Production Max. Rate unit	Operating hour hr	Production Rate hourly ton/hr	Production Rate annually ton/yr	Drop points	EFs unit	Emissions (PM10) hourly lb/hr	Emissions (PM10) annually ton/yr	Remark
TR1 infeed deck	15.75 MBF	1752	75.60	132451	NA	0.02 lb/ton	0.00	0.00	(MBF/hr)=12.6(MMBF of log/yr)/800(hr 1000 app. 7/19/95, 1/8/96, AP-42, T10.3-1(2/8 (MBF/hr) = (MBF/yr)/op hr(hr/yr) $EF(\text{lb/ton}) = k * 0.0032 * (U/5)^{(1.3)/(M/2)}$ AP-42 13.2.4 eq 1.
TR2 chain conveyor	0.015 BDT	8760	0.03	263	1	0.02 lb/ton	0.00	0.00	$E(\text{lb/hr}) = EF * \text{material handled}(\text{lb/hr}) *$
TR3 2 vib.2 belt conveyors	2.115 BDT	8760	4.23	37055	6	0.02 lb/ton	0.43	1.86	drop points
TR4 2 chain conveyor	2.115 BDT	8760	4.23	37055	1	0.02 lb/ton	0.07	0.31	
TR7 belt conveyors	0.233 BDT	8760	0.47	4079	1	0.02 lb/ton	0.01	0.03	
TR5 front end loader	1.875 BDT	8760	3.75	32850	2	0.02 lb/ton	0.13	0.55	app. 7/19/95 and 4/7/95.
TR6 front end loader	1.089 BDT	8760	2.18	19086	2	0.02 lb/ton	0.07	0.32	transfer point NA. assume: 2 point
TR 8 front end bucket	1.179 BDT	8760	2.36	20656	2	0.02 lb/ton	0.08	0.35	transfer point NA. assume: 2 point
TR 9 front end bucket	0.600 BDT	8760	1.20	10512	2	0.02 lb/ton	0.04	0.18	transfer point NA. assume: 2 point
SUM							0.82	3.60	
without count pile	PM-10 lb/hr								
TOTAL	135+j62	135+k62							
	44.67	195.66							

APPENDIX B

Table B-1

Ceda Pine emissions summary

Date: 21-May-9

Source	PM		PM10		CO		NOx		SO2		VOC	
	lb/hr	t/y	lb/hr	t/y	lb/hr	t/y	lb/hr	t/y	lb/hr	t/y	lb/hr	t/y
Hogged fuel boiler	5.40	11.20	4.90	10.20	13.70	28.50	5.72	25.00	0.50	0.95	5.80	12.10
Standby diesel boiler	0.18	0.78	0.18	0.78	0.45	1.94	1.78	7.78	6.41	27.99	0.02	0.08
process and material handling	51.73	71.51	31.84	50.01	—	—	—	—	—	—	14.40	60.47
storage tank	46.20	47.78	26.84	27.51	—	—	—	—	—	—	0.09	0.40
total	103.50	131.24	63.76	88.50	14.15	30.44	7.50	32.78	6.91	28.94	20.31	73.05

Table B-2

Date: 21-May-98

Deep Pine Veneer, Inc.

Hogged Fuel Boiler and Standby Diesel Boiler Technical Analysis

permitted maximum allowable hourly and annually fuel combustion rate

Boiler conversion factors (AP-42, 1/95, A-29)

1 lb steam/hr = 1.7E+03 BTU/hr

Remark

1.4 = 1.7E+03 but/hr. using 1.7E+03 is conservative

Note: boiler efficiency has been considered here already

1. HOGGED FUEL BOILER

1.1 Fuel data (Per application, tested 2/95, received 4/7/95)

Heating value(as received) 3,857 btu/lb

Moisture content 56.19 %

Nitrogen content 0.1 %

1.2 Boiler design capacity

20,000 lb steam/hr = 34 MM BTU/hr

 $(1.7E+03 \text{ BUT/hr}) / (1 \text{ lb steam/hr}) * (20,000 \text{ lb steam/hr}) / 1E+06 = 34 \text{ MM BTU/hr}$

1.3 Permitted limits (# 0240-0038)

	lb/hr	tons/yr
PM	5.4	11.2
PM-10	4.9	10.2
CO	13.7	28.5
NOx	2.3	4.9
SO2	0.5	1.1
VOC	5.8	12.1

1.4 Emission factors (EFs) with multicone controlled

Fuel data (AP-42, 1/95, A-5)

Heating value = 4,850 Btu/lb

Moisture content 50 %

PM:

Emission rate(PM,avg) = 3.9 lb/hr

Emission Factor(PM,EF) = 1.11 lb/ton fuel used

CO:

Emission rate(CO,avg) = 5.3 lb/hr

Emission Factor(CO,EF) = 1.51 lb/ton fuel used

NOx(EF) = 3.6 lb/ton fuel used

SO2(EF) = 0.075 lb/ton fuel used

VOC(EF) = 0.22 lb/ton fuel used

per application (4/7/95) and test report in source file, tested 7/90

No lb/hr fuel input data were recorded even though it is the requirement of permit #0240-0038 sec. 3.1. Therefore, the average fuel data from AP-42 are used to estimate EFs.

source test data

EF, PM = $3.9(\text{lb/hr}) / 34(\text{mmbut/hr}) * 4,500(\text{but/lb}) * 2000(\text{lb/ton}) / 1E+6(\text{btu/mmbtu})$

source test data

EF, PM = $5.3(\text{lb/hr}) / 34(\text{mmbut/hr}) * 4,500(\text{but/lb}) * 2000(\text{lb/ton}) / 1E+6(\text{btu/mmbtu})$

AP-42, 1/95 T1.6-2 & foot note "c"

AP-42, 1/95 T1.6-2

1.5 Combustion rate (ton/hr)

Max. hourly = 2.8 ton/hr

Max. annually = 23520 ton/yr

Nor. annually = 19800 ton/yr

Per application combustion rate, received 4/7/95 and source test

per application, 7day*24hr*52wk

Nor = Max./1.2

Max. hourly = 3.51 ton/hr

Max. annually = 29443.30 ton/yr

Nor. annually = 24536.08 ton/yr

per assumed fuel data and source test

 $1/h = 20,000(\text{lb steam/hr}) * (1.7E+3(\text{btu/lb steam}) / ((4,500+5200)/2)(\text{btu/lb}) / 2000(\text{lb/ton}))$

Nor = Max./1.2

1.6 Emissions

	lb/hr	ty,max.	ty,nor.
PM	3.12	13.08	10.90
PM-10	3.12	13.08	10.90
CO	4.23	17.78	14.82
NOx	10.08	42.34	35.28
SO2	0.21	0.88	0.74
VOC	0.62	2.59	2.16

Per application

emission (lb/hr) = EF(lb/ton fuel) * (ton fuel/hr)

emission (ty) = EF(lb/ton fuel) * (ton fuel/yr) / 2000(lb/ton)

Nor = Max./1.2

Table B-2

	lb/hr	t/y,max.	t/y,nor.
PM	3.90	16.38	13.65
PM-10	3.90	16.38	13.65
CO	5.30	22.26	18.56
NOx	12.82	53.00	44.18
SO2	0.26	1.10	0.92
VOC	0.77	3.24	2.70

per assumption

emission (lb/hr) = EF(lb/ton fuel)*(ton fuel/hr)

emission (t/y) = EF(lb/ton fuel)*(ton fuel/yr)/2000(lb/ton)

Nor = Max./1.2

2. STANDBY DIESEL BOILER**2.1 Fuel data**

Heating value = 140,000 btu/gal
Sulfur content = 0.5 %

AP-42, 1/95, A-5
IDAPA 16.01.01.728

2.2 Boiler design capacity

10,000 lb steam/hr = 17 MM BTU/hr

(1.7E+03 BTU/hr)/(1 lb steam/hr)*(10,000 lb steam/hr)/1e+06=17 MM BTU/hr

2.3 Emission factors (EFs)(lb/10³gal)

PM 2
PM10 2
CO 5
NOx 20
SO2 72
VOC 0.2

AP-42, 1/95, T1.3-2

***2.4 Combustion rate**

*Max. hourly = 89 gal/hr
Max. annually = 777504 gal/yr
*Nor. annually = 647920 ton/yr

Per application combustion rate, received 4/7/95
Max. gal/yr = Max. 89 (gal/hr)*7day*24hr*52wk
Nor = Max./1.2

2.5 Emissions

	lb/hr	t/y,max.	t/y,nor.
PM	0.18	0.78	0.65
PM-10	0.18	0.78	0.65
CO	0.45	1.94	1.62
NOx	1.78	7.78	6.48
SO2	6.41	27.99	23.33
VOC	0.02	0.08	0.06

emission (lb/hr) = EF(lb/1e+3 gal)*(gal/hr)/1000(gal/1e+3 gal)

emission (t/y) = EF(lb/1E+3)*(gal/yr)/2000(lb/ton)/1000 (gal/1e+3 gal)

Nor = Max./1.2

Table B-3

Date: 21-May-96

Ceda Pine Veneer, Inc.

ESTIMATING EMISSIONS (PM10) FROM PROCESS AND MANUFACTURING OPERATIONS

1. ASSUMPTIONS:

Moisture content of log: 50%
 Moisture content of veneer: 15%
 $\alpha = 1.2 \times \text{Nor.}$

2. CONVERSION FACTORS

1 ton of log = 1 BD tons log/(1-moisture content percentage of log)

1 MBF (thousand board feet) = 4.8 tons of log (Pinhurst PM10 SIP, 2/5/92, B-45)

3. PM10 EMISSIONS

3.1 OUTDOOR ACTIVITIES

Production throughput = 12.6 MMBF of log/yr

coefficient = 1

Production throughput*coeff. = 12.6 MMBF of log/yr

Process	Hourly Production max*co.	unit	Max. Rate	Operating hour	Production hourly	Rate Max. annually	Emission Factors	unit	Emissions hourly	Annually	Remark
				hr	ton/hr	ton/yr			lb/hr	ton/yr	note is same as that for PM unless specified here
P1 Deck saw	15.75	MBF	15.75	800	75.60	60480	0.2	lb/ton	15.12	6.05	EPA AIRS (3/90) SCC 3-07-008-02
p2 Ring debarker	3.15	MBF	3.15	4000	15.12	60480	0.011	lb/ton	0.17	0.33	EPA AIRS (3/90) SCC 3-07-008-01
p3 Chop saw #1	3.15	MBF	3.15	4000	15.12	60480	0.2	lb/ton	3.02	6.05	same as p1
p4 Rosser head debarker	1.20	MBF	1.20	4000	5.78	23040	0.011	lb/ton	0.06	0.13	same as p2
p5 Chop saw #2	7.05	BDT	7.05	4000	14.11	56436	0.2	lb/ton	2.82	5.84	same as p1
p7 Chipper #1	7.22	BDT	7.22	4000	14.44	57758	0.1	lb/ton	1.44	2.89	EF(PM10)*(1-50%)=EF(PM10)
p8 Chipper #2	0.14	BDT	0.14	4000	0.29	1152	0.1	lb/ton	0.03	0.06	same as Chipper #1
p9 Screen out	7.22	BDT	7.22	4000	14.44	57758	0.071	lb/ton	1.03	2.05	PM10
p11 Falcon hog	2.12	BDT	2.12	4000	4.23	16920	0.1	lb/ton	0.42	0.85	same as Chipper #1
p17 Knife hog(Veneer)	0.14	BDT	0.14	4000	0.16	1368	0.1	lb/ton	0.02	0.07	same as Chipper #1
SUM									24.13	24.11	

3.2 INDOOR ACTIVITIES

Assume indoor control efficiency =

90%

Process	Hourly Production max*co.	unit	Max. Rate	Operating hour	Production hourly	Rate Max. annually	Emission Factors	unit	Emissions hourly	Annually	Remark
				hr	ton/hr	ton/yr			lb/hr	ton/yr	
Sawmill	7.05	BDT	7.05	4000	14.11	56436	0.2	lb/ton	2.54	5.08	EPA AIRS (3/90) SCC 3-07-008-02
#4 Siloer									negligible		
p16 chip/grade				8760	2.60		0.2	lb/ton	0.05	0.23	
SUM									2.59	5.31	

3.3 CYCLONES

ACFM: actually cubic feet per minute. Here assume act=cof.

Process	Hourly Production max*co.	unit	Max. Rate	Operating hour	Stack exit Gas flow r acfm	Stack exit temp.	Emission Factors	unit	Emissions hourly	Annually	Remark
				hr					lb/hr	ton/yr	
p10 Fine Blower Cyclone	1.2	BDT	1.2	4000	2300	ambient	0.03	gr/scf	0.24	0.47	emission(PM10)=(0.8/2.0)*emission(PM) EPA AIRS (3/90) SCC 3-07-008-08
P18 Glowbe saw cyclone	NA	BDT		800	1000	ambient	0.03	gr/scf	0.10	0.04	
SUM									0.34	0.51	

3.4 STEAM CHAMBERS AND THE STEAM DRYER

Conversion factors

1 MBF, thousand board feet =

1.75 tons of rough green lumber (Pinhurst PM10 SIP, 2/5/92, B-45)

1 MBF, thousand board feet =

8/3 MSF, thousand 3/8" square feet

Process	Hourly Production max*co.	unit	Max. Rate	Operating hour	Production hourly	Rate Max. annually	Emission Factors	unit	Emissions hourly	Annually	Remark
				hr	ton/hr	ton/yr			lb/hr	ton/yr	
P12 Steam chamber #1	1.26	MBF	1.26	8400	2.21	16592	1.59	lb/MBF	2.01	5.45	EF(PM10)=EF(PM)
P13 Steam chamber #2	1.26	MBF	1.26	8400	2.21	16592	1.59	lb/MBF	2.01	5.45	same as p12
p15 Steam dryer	0.95	MSF	0.95	8400			0.8	lb/MSF	0.76	3.19	EF(PM10)
	2.53	MBF	2.53	8400	4.43	37184					
SUM									4.78	26.08	

PM emissions from process and manufacturing operation are:

Total(PM10) = 31.84 lb/hr
 50.01 Ton/yr

Table B-4

Date: 21-May-98

Cada Pine Veneer, Inc.

ESTIMATING EMISSIONS (PM₁₀) FROM SOLID MATERIAL TRANSPORT, HANDLING, AND STORAGE

1. ASSUMPTION

Moisture content of green wood = 50%
 Moisture content of dry wood = 15%

2. PM₁₀ EMISSIONS

BDT: Bon dry ton. unit conversion: ton = BD ton/(1-moisture content percentage of log)

2.1 STORAGE PILES

Process	Hourly production max*co. unit	Max. Rate	Operating hour hr	Production Rate hourly ton/hr	Max. annually ton/yr	Emission Factors PM unit	Emissions PM hourly lb/hr	annually ton/yr	Remark same as PM estimation unless specified here assume:EF(log fuel)= 20% EF of sawdust
*ST2 Sawdust pile	1.09 BDT	1.09	400	2.18	872	0.38 lb/ton	0.78	0.18	EPA AIRS(3/90) SCC 3-07-008-03
*ST3 Fuel house	2.56 BDT	2.56	4000	5.12	20480	0.072 lb/ton	0.18	0.37	contd eff. of half enclos 50%
*ST4 Storage pile	7.50 BDT	7.5	400	15.00	6000	0.072 lb/ton	1.08	0.22	
*ST5 Bin bunker no ba	0.29 BDT	0.29	4000	0.34	1365	0.072 lb/ton	0.02	0.05	
*ST6 Ash bunker	0.29 BDT	0.29	700	0.29	203	0.36 lb/ton	0.10	0.04	
* Inconsistency of two app. (7/17/95 & 4/7/95)									
SUM							2.18	0.53	

2.2 BINS

Process	Hourly Production unit	Max. Rate	Operating hour hr	Production Rate hourly ton/hr	Max. annually ton/yr	Emission Factors unit	Emissions (PM) hourly lb/hr	annually ton/yr	Remark
ST1 Bin(chip surge)	7.22 BDT*	7.22	2000	14.44	28879	0.58 lb/ton	8.37	8.37	EPA AIRS(3/90) SCC 3-07-030-01
ST7 Chip bin	0.15 BDT*	0.15	4000	0.18	708	0.58 lb/ton	0.10	0.20	EPA AIRS(3/90) SCC 3-07-030-02
						1.2 lb/ton	0.21	0.42	
SUM							26.02	26.33	

2.3 TRANSFER/CONVEYOR

Wind speed = 9 mph (per application 7/19/95)
 Moisture content = 50% (per application 7/19/95)
 K(PM) = 1 (AP-42, 1/95, 13.2.4)
 K (<30 um) = 0.74 (AP-42, 1/95, 13.2.4)
 K (<10 um) = 0.35 (AP-42, 1/95, 13.2.4)
 Production throughput = 12.8 MMBF of log/yr
 coefficient = 1
 Production throughput*coeff. = 12.8 MMBF of log/yr

Process	Hourly Production		Operating hour	Production Rate Max.		Drop points	Emission (PM)		Emissions (PM)		
	Max. Rate	unit		hourly ton/hr	annually ton/yr		Factors	unit	hourly lb/hr	annually ton/yr	
TR1 infeed deck	3.15	MBF	3.15	4000	15.12	60480	NA	0.02	lb/ton	0.00	0.00
TR2 chain conveyor	0.02	BDT	0.02	4000	0.03	120	1	0.02	lb/ton	0.00	0.00
TR3 2 vib.2 belt conve	2.12	BDT	2.12	4000	4.23	16920	6	0.02	lb/ton	0.43	0.85
TR4 2 chain conveyor	2.12	BDT	2.12	4000	4.23	16920	1	0.02	lb/ton	0.07	0.14
TR7 belt conveyors	0.23	BDT	0.23	4000	0.47	1862	1	0.02	lb/ton	0.01	0.02
TR5 front end loader	1.88	BDT	1.88	1800	3.75	6000	2	0.02	lb/ton	0.13	0.10
TR6 front end loader	1.09	BDT	1.09	400	2.18	871	2	0.02	lb/ton	0.07	0.01
TR 8 front end bucket	1.18	BDT	1.18	1000	2.36	2358	2	0.02	lb/ton	0.08	0.04
TR 9 front end bucket	0.80	BDT	0.60	1000	1.20	1200	2	0.02	lb/ton	0.04	0.02
SUM										0.82	1.18

without count pile emissions

PM
 TOTAL lb/hr 26.84
 27.51

APPENDIX C

02/07/96
14:47:48

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

Ceda Pine Veneer, Inc. Hog Fuel Boiler (NOx)

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.35000
STACK HEIGHT (M) = 12.1900
STK INSIDE DIAM (M) = .6400
STK EXIT VELOCITY (M/S) = 22.3945
STK GAS EXIT TEMP (K) = 436.0000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = .0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 13.1100
MIN HORIZ BLDG DIM (M) = 13.7200
MAX HORIZ BLDG DIM (M) = 18.2900

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 15265.000 (ACFM)

BUOY. FLUX = 7.375 M**4/S**3; MOM. FLUX = 34.511 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	0	.0	.0	.0	.00	.00	.00	NA
100.	650.1	6	4.0	4.5	10000.0	15.84	4.07	9.76	SS
200.	198.3	5	5.0	5.4	10000.0	18.67	11.63	13.65	SS
300.	125.2	4	5.0	5.2	1600.0	17.86	22.61	17.44	SS
400.	96.96	4	4.5	4.6	1440.0	19.68	29.45	20.01	SS
500.	78.79	4	4.0	4.1	1280.0	22.21	36.15	22.43	SS
600.	70.46	6	4.0	4.5	10000.0	26.46	21.24	15.78	SS
700.	66.53	6	4.0	4.5	10000.0	26.46	24.46	16.59	SS
800.	62.92	6	4.0	4.5	10000.0	26.46	27.63	17.38	SS
900.	59.56	6	4.0	4.5	10000.0	26.46	30.78	18.14	SS
1000.	56.42	6	4.0	4.5	10000.0	26.46	33.88	18.89	SS
1100.	53.50	6	4.0	4.5	10000.0	26.46	36.96	19.62	SS
1200.	50.78	6	4.0	4.5	10000.0	26.46	40.01	20.34	SS
1300.	48.49	6	3.5	3.9	10000.0	28.26	43.04	20.62	SS
1400.	46.57	6	3.5	3.9	10000.0	28.26	46.05	21.32	SS
1500.	44.33	6	3.0	3.3	10000.0	30.57	49.03	21.50	SS
1600.	42.05	6	3.5	3.9	10000.0	28.26	51.99	21.90	SS
1700.	40.58	6	3.0	3.3	10000.0	30.57	54.94	22.07	SS
1800.	39.40	6	3.0	3.3	10000.0	30.57	57.87	22.64	SS
1900.	38.23	6	3.0	3.3	10000.0	30.57	60.78	23.20	SS
2000.	37.10	6	3.0	3.3	10000.0	30.57	63.68	23.75	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
40. 1331. 6 4.0 4.5 10000.0 12.94 1.78 6.84 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST	CONC	U10M	USTK	MIX HT	PLUME	SIGMA	SIGMA
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(M)	(UG/M**3)	STAB	(M/S)	(M/S)	(M)	HT (M)	Y (M)	Z (M)	DWASH
122.	515.6	6	4.0	4.5	10000.0	17.21	4.89	10.84	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** CAVITY CALCULATION - 1 ***		*** CAVITY CALCULATION - 2 ***	
CONC (UG/M**3)	= 1351.	CONC (UG/M**3)	= 1212.
CRIT WS @10M (M/S)	= 5.34	CRIT WS @10M (M/S)	= 7.94
CRIT WS @ HS (M/S)	= 5.56	CRIT WS @ HS (M/S)	= 8.26
DILUTION WS (M/S)	= 2.78	DILUTION WS (M/S)	= 4.13
CAVITY HT (M)	= 18.49	CAVITY HT (M)	= 16.53
CAVITY LENGTH (M)	= 24.86	CAVITY LENGTH (M)	= 15.94
ALONGWIND DIM (M)	= 13.72	ALONGWIND DIM (M)	= 18.29

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1331.	40.	0.
BLDG. CAVITY-1	1351.	25.	-- (DIST = CAVITY LENGTH)
BLDG. CAVITY-2	1212.	16.	-- (DIST = CAVITY LENGTH)

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS. **

Conversion Factor: 0.08 (convert hourly concentration to annually one);
 Annually Background Concentration: 40 UG/M^3;
 NAAQS Standard for NOx: 100 UG/M^3;
 At facility's boundary, worst case:
 Annually concentration (UG/M^3) = 515.6 (UG/M^3) * 0.08 + 40 (UG/M^3) = 81.2 UG/M^3
 It is 81% of the standard.
 The facility shall be able to run its Hog Fuel Boiler at the adjusted permit limit for NOx.